

PL), and finally become opportunistic herbivores as adults (>200 mm PL), although they did continue to opportunistically take animal prey.

During the study period three fecal samples from juvenile *E. madagascariensis* revealed remains of the scorpion *Grosphus hirtus* Kraepelin (Lourenço and Goodman 2006. Zool. Anz. 244:181–185). The first sample was from a juvenile #215 (105 mm PL) caught at Antsilomba Lake (16°16'25.2"S, 46°43'04.3"E) on 22 February 1999. The second sample came from juvenile #585 (160 mm PL) on 3 March 2000 from the locality of Ambarindahy (16°15'11.7"S, 046°43'21.8"E), and the third sample was collected from juvenile #711 (75 mm PL) at Lake Antsilomba on 13 March 2000.

This is the first record of turtles preying on scorpions in Madagascar, and possibly the first record of turtles eating scorpions anywhere (McCormick and Polis 1990. *In* The Biology of Scorpions, pp. 294–320. Stanford, Stanford Univ. Press).

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GOPHERUS POLYPHEMUS (Gopher Tortoise). **MORTALITY.** *Gopherus polyphemus* has declined precipitously in range and numbers in Florida and recently was state-listed as a "threatened" species under the Florida Wildlife Code (Chap. 39, Florida Administrative Code). At ca. 1000 h on 27 July 2006, GK observed a 23 cm carapace length male *G. polyphemus* between the North-South railroad tracks on the eastern boundary of Savannas Preserve State Park (SPSP) in St. Lucie County, Florida (Fig. 1). The tortoise seemed uninjured, but was deceased. Eastern Box Turtles (*Terrapene carolina*) were recently shown to have great difficulty escaping railroad tracks, with overheating to critical levels likely to occur in 4.5–5 h (Kornilev et al. 2006. Herpetol. Rev. 37:145–

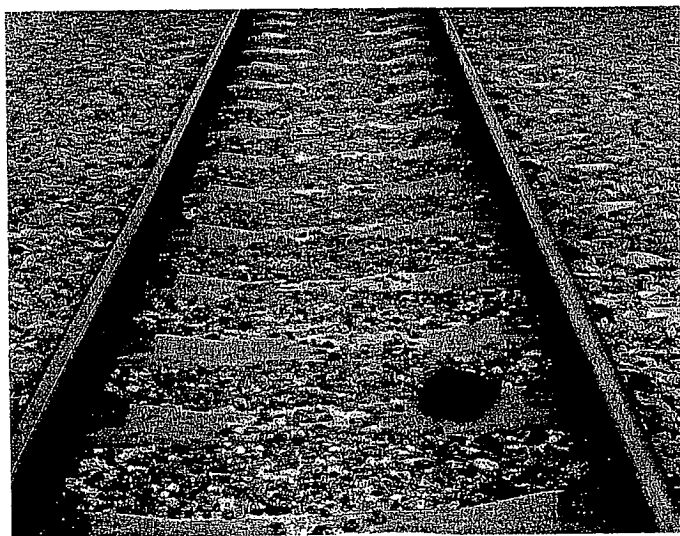


FIG. 1. Deceased *Gopherus polyphemus* found between railroad tracks at Savannas Preserve State Park, Florida. Photo by G. Kaufmann.



FIG. 2. View of tracks showing re-contouring of right-of-way with crushed rock, possibly allowing easier access to the interior of the tracks by *G. polyphemus*. Photo by G. Kaufmann.

148). Similarly, the most logical explanation for the Gopher Tortoise death would be entrapment between the tracks, followed by critical overheating and/or dehydration (high and average temperatures for the previous day had been ca 31°C and 28°C, respectively). Recent re-contouring of the railroad track right-of-way corridor with crushed rock had coincidentally created "ramps" (Fig. 2) increasing the feasibility for tortoises to scale the track rail to reach the interior portion of the tracks. Alternatively, access to the interior of the tracks could have been accomplished at the crossing intersection at nearby Walton Road, 186 m south of where the carcass was found, with the tortoise continuing to move along the tracks, instead of escaping by retracing its route. Turtle species with superior climbing abilities to *G. polyphemus* might be more able to escape entrapment between the 19 cm high rails (if they are of sufficient size). For example, Engeman (*in press*, J. Kansas Herpetol.) observed a 33 cm carapace-length *Apalone spinifera* climb a series of 14 stairs, each 18–19 cm high, indicating that such an individual might be able to escape the railroad tracks.

Tortoises are subject to a variety of anthropogenic sources of mortality, with collisions with vehicles the most apparent for *G. polyphemus* in southeastern Florida State Parks (HTS, pers. obs.). Vehicles have likewise been well-documented as hazards for the related *G. berlandieri* (Engeman et al. 2004. Herpetol. Rev. 35:54–55), and *G. agassizii* (e.g., Boarman and Sazaki 1996. *In* Evink et al. [eds.], Trends in Addressing Transportation Related Wildlife Mortality, pp. 179–184. State of Florida Dept. Transportation, Tallahassee, Florida; Luckenbach 1982. *In* Bury [ed.], North American Tortoises: Conservation and Ecology, pp. 1–38. USFWS Wildl. Res. Rpt. 12). Additional causes of anthropogenic mortality for *Gopherus* spp. have included entanglement in wire fences (Engeman et al. 2004, *op. cit.*), although we have not detected this for *G. polyphemus* during fenceline searches in nearby Jonathan Dickinson State Park. Similarly, numerous patrols down the SPSP track corridor since Jan 2004 have not identified railroad related tortoise mortality prior to this observation. Therefore, we speculate that the re-contouring of the railroad track right-of-way may

have had made track entrance more likely for *G. polyphemus*.

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HYDROMEDUSA TECTIFERA (South American Snake-necked Turtle). **COPULATION.** The freshwater chelid turtle *Hydromedusa tectifera* is distributed in rivers and streams of northeastern Argentina, Paraguay, eastern and southeastern Brazil, and part of Uruguay (Cei 1993. Mus. Reg. Sci. Nat. Torino Monogr. 14). The province of Córdoba (central Argentina) is home to a population that is isolated from the species' core distribution area and inhabits streams in the central region of the Sierras (Cabrera 1998. Las Tortugas Continentales de Sudamérica Austral. Privately printed, Córdoba, Argentina. 108 pp.). We report three observations of copulation of this species in two streams in Córdoba. In all observations, males were on top of females, grabbing them with the front and rear claws by the carapace edge, and continuously biting the central region of the neck. Males folded the tail to have it closer to the tail of the female. Copulation lasted less than 60 minutes on all three occasions. After copulation, the male released the female, which then swam rapidly away. The first copulation was observed at 2100 h on 11 October 2005 (spring) in Toro Muerto stream (31°23.5'S, 64°35.8'W). The specimens (carapace length 243 mm, male; 257 mm, female) were submerged at a depth of 40 cm, in a river section with sandy substrate, at a water temperature of 16.5°C and air temperature of 10°C. On 4 August 2006 (winter), we made a second observation, at 2015 h in Toro Muerto stream (31°22.7'S, 64°36.3'W). The specimens (carapace length 264.6 mm, male; 256.9 mm, female) were submerged at a depth of 30 cm, on a rocky, well vegetated substrate. Water temperature was 9°C and air temperature 3.5°C. The third observation was made in Tanti stream (31°21.2'S; 64°33.9'W) at 1920 h on 5 September 2006 (winter). The specimens (carapace length 240 mm, male; 251.2 mm, female) were submerged at a depth of 90 cm, on a rocky bed with sand and submerged aquatic vegetation. Water and air temperatures were 17°C and 20°C, respectively. *Hydromedusa tectifera* is one of the least documented reptile species in Argentina, especially concerning aspects of its ecology. This is apparently the first description of copulation of this species in the wild.

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KINOSTERNON SCORPIOIDES (Scorpion Mud Turtle). **BEHAVIOR.** Semiaquatic mud turtles (genus *Kinosternon*) are broadly distributed in a variety of habitats from eastern North

America to northern Argentina. The southern two-thirds of this range is occupied by its largest member, *Kinosternon scorpioides*, of which various regional subspecies have been described based upon head and plastron coloration, extent of carination of the carapace, plastral seam ratios, and adult size (Ernst and Barbour 1989. Turtles of the World. Smithsonian Inst. Press, Washington DC. 313 pp.). The natural history of this species is not well known; its penchant for turbid shallow water, including anthropogenic habitats, outside of rain forests in northern South America is noted in the most exhaustive account of the species to date (Pritchard and Trebbau 1984. The Turtles of Venezuela. SSAR Contrib. Herpetol. No. 2, 403 pp. + 47 color plates + 16 maps).

On 11 November 1999 six specimens of *K. scorpioides* were found in a roadside pool and in a roadside ditch between Mariscal Estigarribia, Depto. Boquerón, and Parque Nacional Defensores del Chaco, Dept. Alto Paraguay, Paraguay. The GPS coordinates are 21°29'885"S, 59°52'736"W and 21°11'184"S, 59°45'188"W. The first individual was seen from a moving vehicle as it sat motionless, possibly basking, on the far embankment of the pool at 1115 h. Seconds later, upon my approach, the turtle moved quickly upwards, away from the water, towards the dense, spiny vegetation locally known as "chañar" consisting of various species of *Bromelia*, *Dyckia*, and *Aechmea*. More than 2 h later, in a roadside ditch stretching to the horizon, movement seen from the vehicle prompted investigation. Within 2 minutes, three searchers found 5 *K. scorpioides* (2 males, 2 females, 1 juvenile) in water no deeper than 30 cm. As they were pursued, two of the turtles emerged from the water body, climbed the embankment, and moved towards the adjacent chañar. The larger male and one female bore several ticks in the soft parts of their anterior portions, whereas the juvenile's carapace had a dense growth of algae.

There appear to be few literature records of aquatic turtles (i.e., those known to largely live and feed in aquatic habitats) purposely seeking immediate refuge away from the water. In this case, the spiny vegetation may have offered better protection from predators than did the open, shallow water.

Terrestrial refugia are apparently used by non-estivating aquatic chelonians elsewhere in the Gran Chaco, in most of which there is no permanent surface water. In January 1987 and 1988, 7 of 26 specimens of *Acanthochelys pallidipectoris* were found beneath broad leaves of living bromeliads on dry land during the rainy season in nearby northern Argentina, in the vicinity of abundant, seasonal shallow bodies of water (Monguillot and Fabius 1993. Bol. Soc. Zool. Uruguay 2da época 8:196–203). The seeking of terrestrial refugia (rather than nearer aquatic habitat) upon release by the third species of non-terrestrial chelonian in the region, *A. macrocephala*, following capture in shallow water has been recently documented by Métrailler (2006. Manouria 9[33]:26–32). This observation took place in February 2002.

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LEPIDOCHELYS KEMPPII (Kemp's Ridley Seaturtle). **DEVELOPMENTAL HABITAT.** Kemp's Ridley Seaturtle is unique because it nests primarily on a single beach in Tamaulipas, Mexico (Rancho Nuevo), and it nests during the day in large groups called